
Minority Workers in the Tenth District: Rising Presence, Rising Challenges

By Chad R. Wilkerson and Megan D. Williams

The population of the Tenth Federal Reserve District has become increasingly diverse in recent decades. Since 1970, the share of ethnic and racial minorities in the district has nearly doubled, reaching 25 percent of the area's population in 2005. Minority job situations and earnings have long been topics of national interest for economic researchers and public policymakers. Further, minority workers are a rapidly growing part of the district's labor force and thus a vital resource for district businesses.

This article considers the jobs and earnings of Tenth District minority groups, both for today and over the next five to ten years. The first section details the growth, location, and size of minority groups. The second section examines the current pay and occupations of minority workers. The third section explores the five-to-ten-year outlook for jobs held by minorities and compares them with projections for the future supply of minority workers in the district. The final section addresses implications of the findings for minority workers.

The district's three largest minority groups—Hispanics, blacks, and Native Americans—are much less concentrated in high-paying occupations than are non-Hispanic whites. High-paying jobs generally require higher skill and educational levels—advantages that these three minority

Chad R. Wilkerson is assistant vice president, branch executive, and economist at the Oklahoma City Branch of the Federal Reserve Bank of Kansas City. Megan D. Williams is an associate economist at the Oklahoma City Branch. This article is on the bank's website at www.KansasCityFed.org.

groups often lack. Moreover, the five-to-ten-year outlook for jobs held by these groups is not as bright as the outlook for jobs held by non-Hispanic whites, when both expected quantity and quality of future job growth are taken into account. More education will be needed to boost both the long-term and short-term job prospects for minorities in the Tenth District.

I. TENTH DISTRICT MINORITY GROUPS

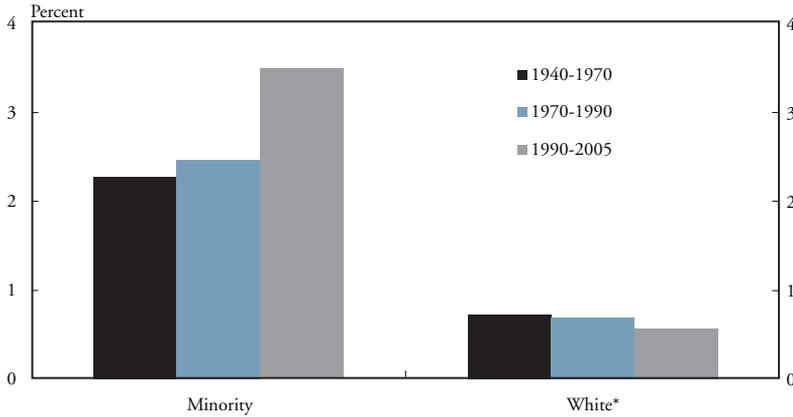
In 1940, minorities made up less than 10 percent of the total population of the states of the Tenth Federal Reserve District.¹ Based on the limited data available, this percentage had remained roughly constant over the previous 50 years. In three district states (Kansas, Nebraska, and Wyoming), the minority share of total population on the eve of the U.S. entry into World War II was less than 5 percent. Only in New Mexico did minorities account for more than 10 percent of the district state's population.

Over the following 50 years, minorities' share of population roughly doubled, to about 18 percent in 1990. Average annual minority population growth from 1940 to 1990 was nearly 2.5 percent, over three times as fast as population growth among whites (Chart 1).² The fastest population growth in the region during this period occurred among Asians, especially following the passage of a less-restrictive national immigration law in 1965 (Borjas). However, population growth among all minority groups was more than twice that of whites from 1940 to 1990, due in large part to higher birthrates.³

More recently, gains in the minority share of the district's population have accelerated. Annual minority growth rose to 3.5 percent from 1990 to 2005, while growth for whites eased slightly. For Hispanics in each of the Plains states—Kansas, Missouri, Nebraska, and Oklahoma—population growth was especially rapid, averaging over 6 percent per year during this period, due in part to immigrants seeking meat-packing jobs in these states (Keeton and Newton). Overall, Hispanics increased their population share from 7.5 percent in 1990 to 12 percent in 2005. Population growth for other minority groups during

Chart 1

AVERAGE ANNUAL POPULATION GROWTH IN TENTH DISTRICT STATES 1940-2005



* Non-Hispanic

Source: U.S. Census Bureau

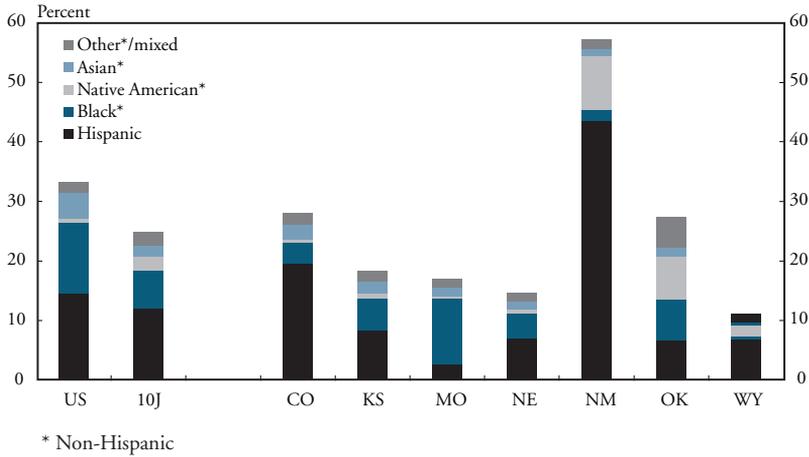
the period also continued to exceed that of whites. As a result, from 1990 to 2005 other minority groups as a whole increased their population share in the District from 10 to 13 percent.

In 2005, minorities made up over half the population in New Mexico and over a quarter in Colorado and Oklahoma (Chart 2). The minority share in the other four district states—Kansas, Missouri, Nebraska, and Wyoming—ranged from 11 percent to 18 percent. The largest concentrations in the district could be found in northern New Mexico, southern Colorado, eastern and southwestern Oklahoma, and southwestern Kansas. In addition, minorities accounted for more than a quarter of the population in at least one of the counties in most of the District's largest metropolitan areas—including Denver, Kansas City, Oklahoma City, Tulsa, and Albuquerque.

The relative size of individual minority groups varies somewhat across District states and also differs from the national makeup. As in the nation, the largest minority group in the District is Hispanics. The District state with the largest percentage of Hispanic residents—by a wide margin—is New Mexico, where Hispanics account for more than 40 percent of total population. Colorado also has a higher

Chart 2

MINORITY POPULATION AS A SHARE OF TOTAL POPULATION, BY RACE OR ETHNIC GROUP, 2005



Source: U.S. Census Bureau

share of Hispanic residents than the nation. The next three largest minority groups in the District are blacks (6 percent), Native Americans (2.5 percent), and Asians (1.7 percent).

II. MINORITY PAY AND JOBS

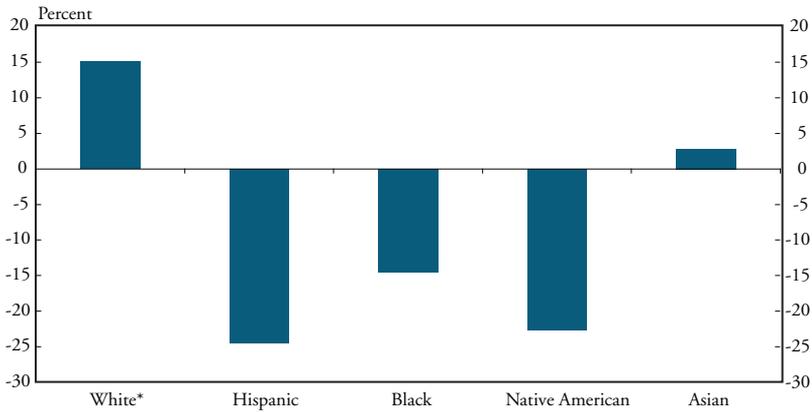
The escalating minority presence in the Tenth District raises the question of how minorities in the region are doing economically. For decades, researchers, policymakers, and the media have taken note of the lower average pay of most minority groups relative to whites, as well as the dearth of minority workers in some high-paying occupations. This section investigates current minority pay gaps in the District. It then analyzes occupational employment data as well as previous research to determine why differing economic circumstances persist.

Minority pay and occupational mix

Median earnings of all minority groups in the Tenth District are lower than for whites. In 2005, the median earnings of the population aged 16 and over in the District (among those receiving earnings) was

Chart 3

**MEDIAN EARNINGS OF RACIAL AND ETHNIC GROUPS
IN THE TENTH DISTRICT, 2005
(DEVIATION FROM OVERALL DISTRICT MEDIAN)**



* Non-Hispanic

Source: U.S. Census Bureau

just over \$25,000.⁴ The median for whites was 15 percent higher (Chart 3). Asians earned slightly more than the overall median. The median earnings for Hispanics, blacks, and Native Americans were 15 to 25 percent below the overall District average.⁵

Much of the disparity in earnings across racial and ethnic groups can be explained statistically by looking at the occupations where workers are concentrated. Researchers have long noted the occupational segregation of workers by race at the national level (Albelda; King). The most recent data show that sizable differences in occupational mix persist among racial and ethnic groups in the District, with minorities generally more concentrated in lower-paying occupations than whites.⁶

Management positions account for about 13 percent of all jobs in the Tenth District and, as a whole, are by far the highest-paying major occupational group (Table 1). In 2000, the share of Hispanics, blacks, and Native Americans in the region's management positions was barely half that of whites.⁷ The Asian share was moderately higher than for other minority groups but still measurably less than for whites.

Table 1

TENTH DISTRICT OCCUPATIONAL EMPLOYMENT BY RACE/ETHNICITY, 2000

Occupational Group(s)	Average US Salary	Share of group employment (%)					
		All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	\$75,443	13.3	14.5	7.4	8.6	7.9	10.6
Professional	\$56,023	19.2	20.3	10.9	14.7	15.0	32.5
Nat. resources, const., and maint.	\$38,951	15.4	13.8	22.2	23.4	20.6	17.1
Sales and administrative	\$33,839	26.6	27.1	22.9	29.2	23.8	19.1
Production and transportation	\$29,956	11.4	11.1	17.5	6.2	15.0	3.7
Services	\$22,761	14.2	13.2	19.1	17.8	17.7	17.1
All occupations	\$41,411	100.0	100.0	100.0	100.0	100.0	100.0
Group's average salary if receiving the average U.S. salary for occupation		\$41,411	\$43,419	\$33,486	\$34,342	\$35,293	\$46,530
<i>Deviation from overall average</i>			5%	-19%	-17%	-15%	12%

* Non-Hispanic

Source: U.S. Census Bureau

Professional jobs—including scientists, lawyers, teachers, and other nonmanagement occupations requiring professional training—account for nearly a fifth of all jobs in the district. Like management positions, these jobs are generally high-paying. Further, the largest minority groups in the region in 2000 had considerably lower concentrations in these occupations than whites. Asians, on the other hand, were highly concentrated in professional jobs.

Other occupational groups—which account for two-thirds of employment in the region—pay considerably less than management and professional jobs. Minorities are generally more concentrated in these jobs. In the lowest-paying occupational group—services jobs—all minority groups have higher concentrations than whites.

The implications of minority concentration in lower-paying occupations on overall pay gaps are clear (Table 1). If all workers in the Tenth District received the average U.S. salary for their occupation in 2000, the region's average salary would have been \$41,411. For Hispanics, the average salary would have been \$33,486, or 19 percent below average. Blacks and Native Americans would also have earned much lower overall salaries based on occupational mix. Asian salaries, on the other hand, would have been well above average.

These figures are not perfectly comparable to the median earnings data shown in Chart 3 for three reasons. First, median earnings are not exactly the same as average salaries. Second, the median earnings data include part-time workers. And third, the latest average salary data are for 2000 rather than 2005. Still, the scale of differences across races is very similar. Earnings of whites and Asians in the region should be above average based on occupational structure alone, while earnings of Hispanics, blacks, and Native Americans should be well below average. These patterns are observed in actual differences in earnings in the region. Thus, the results suggest occupational mix explains a considerable amount of the pay disparities among minority groups in the region.⁸

It also appears, however, that the earnings of minorities in the District compared with whites are less than one would expect based on occupational structure alone. The actual median earnings for district Hispanics and Native Americans are nearly 40 percent below the earnings for whites—yet their occupational structures suggest the difference should be only 20 to 25 percent. Blacks in the region earn about 30 percent less than whites, yet their occupational structures suggest the difference should be only 20 to 25 percent. And Asians in the District earn over 10 percent less than whites, while their occupational structures suggest they should be earning 5 to 10 percent more than whites.

Explaining minority pay and occupational mix

The concentration of minority workers in certain occupations helps explain much of the pay gap between minorities and whites. Considerable research addressing the pay gap—and why minorities tend to concentrate in low-paying occupations—has found that cultural factors also play an important role.

Historically, overt *discrimination in the labor market*, especially prior to 1964 civil rights legislation, accounted for much of the differences in occupational structure and economic outcomes for minorities and whites (Bound and Freeman). Some studies continue to show that certain types of racial discrimination, such as profiling, play a role in different labor market outcomes across races, especially for blacks (Anderson and Shapiro; Darity and Mason; Fix and Struyk). At the

same time, other studies find little impact today from labor market discrimination, after controlling for other factors (Gabriel; Neal and Johnson).

Other studies have found evidence that *immigrant assimilation* plays an important role in differing labor market outcomes for minorities. This explanation seems to be especially true for Hispanics and Asians—groups with higher levels of immigration (Borjas; Chiswick and Miller; O’Neill and O’Neill; Trejo). In particular, immigrants’ education, experience, and skill levels do not transfer perfectly to the U.S. labor market, partly due to language differences. But as succeeding generations become more assimilated into the U.S. workplace and culture, economic differences generally narrow or disappear. For example, by the third generation the wages of Mexican-American men are similar to wages for whites, after controlling for basic human capital traits like education and experience (Trejo).

Geographic mobility may also contribute to differences in occupational structure and wages among some racial groups. Workers with greater financial resources may be better able to move to places that pay higher wages or offer better job opportunities. But for some minority groups, cultural factors may constrain their mobility. This has been found to be especially true for Native Americans, who often live in remote rural areas or on Indian reservations, where job opportunities are limited (Hurst).

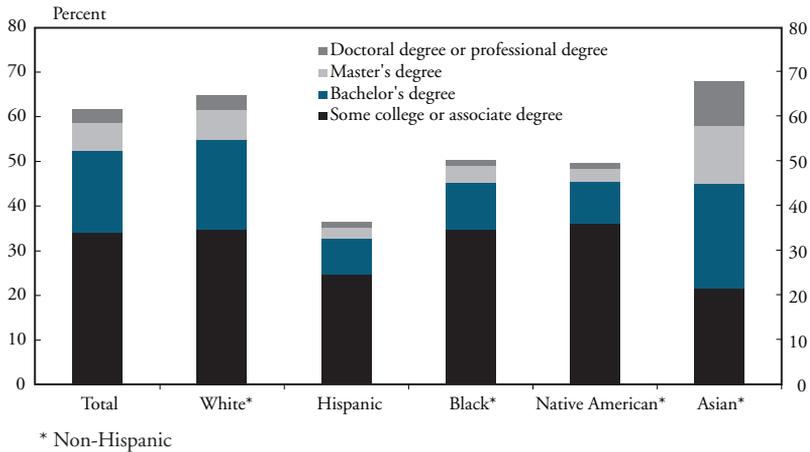
Each of these three cultural factors—labor market discrimination, immigrant assimilation, and geographic mobility—has generally been found to influence the occupational structures and economic outcomes of minorities relative to whites. But the biggest contributing factor, by a wide margin, lies in the differences in human capital traits, which are typically measured by education and skill attainment (Holzer; O’Neill and O’Neill).

Educational attainment of minorities

Educational attainment varies widely by race and ethnicity in the Tenth District (Chart 4).⁹ Hispanics tend to have the least education of all minority groups in the region. In 2000, only 36 percent of Hispanics aged 20 or older had attended at least some college, and only 11 percent had a bachelor’s degree or higher. Blacks and Native Americans

Chart 4

POST-SECONDARY EDUCATIONAL ATTAINMENT, TENTH DISTRICT, 2000, POPULATION AGED 20 AND OVER



Source: U.S. Census Bureau

also had below-average post-secondary educations. By contrast, over two-thirds of Asians aged 20 or older had at least some post-secondary education, and the share of Asians with master's and doctorate degrees (23 percent) greatly exceeded that of all other races and ethnic groups, including whites.

These differences in education are consistent with the earnings gaps shown in Chart 3. Hispanics, blacks, and Native Americans have much lower earnings and educational attainment than the overall District average, while Asians have higher earnings and educational attainment.

For some minority groups, education differences compared with whites are most evident at higher levels. For example, the share of blacks and Native Americans in the region with some college or an associate degree is virtually identical to that of whites. But these groups have much smaller shares of their populations with bachelor's degrees or higher.

III. THE JOB OUTLOOK FOR MINORITIES

Minority groups in the Tenth District have somewhat different occupational mixes than whites. Because the outlook for all occupations is not the same, minorities currently in the labor force could face differing job prospects than whites over the next five to ten years. In

addition, the projected rates of growth in the labor supply are different for minorities and whites, which should also play an important role in future job prospects for minorities.

Expected demand for jobs currently filled by minorities

One way to begin to determine the job outlook for minorities in the region is to project the growth of occupations currently filled by these groups—in other words, to project the growth in demand for these jobs. The most widely respected source of intermediate-term occupational employment projections is the U.S. Bureau of Labor Statistics (BLS). Its latest projections, for the decade 2004 to 2014, were released in late 2005.¹⁰ As in the past, the occupational mix of the nation in the future is expected to change as consumer tastes, technology, and global competition change the industrial structure of the nation. The types of workers needed to get work done in the future will also change.

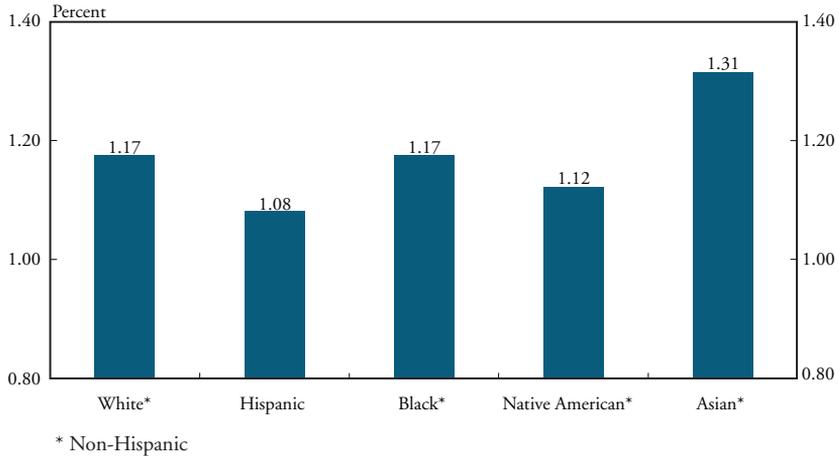
The fastest job growth in the United States from 2004 to 2014 is expected to occur among professional and service occupations, which are generally near the top and bottom of the pay scale, respectively. These projections are due in part to strong expected demand for the products and services of industries that employ large numbers of professional and services workers—most notably in the healthcare sector but also in industries such as software and personal care services (Hecker).

Some occupations within these and other major occupational groups are expected to grow much faster than others. Recent studies attribute this aspect of differing occupational projections to the changing nature of work. Some analysts claim that jobs requiring expert thinking and complex communication skills—skills highly valuable for many professional and service occupations—are likely to grow the fastest (Levy and Murnane). This growth is expected because such skills are difficult to replace with machines, computers, or workers in foreign countries.

The slowest job growth in the United States from 2004 to 2014 (actually declining overall employment) is expected in farming and production. Agriculture and manufacturing jobs are expected to fall primarily due to continued advances in technology, which allow fewer

Chart 5

ANNUAL PROJECTED GROWTH OF JOBS HELD BY RACIAL AND ETHNIC GROUPS IN 2000, (2004-2014)



Source: Bureau of Labor Statistics; Census Bureau; authors' calculations

workers to produce the same or even higher levels of output. In addition, many production jobs are easily filled with less-expensive foreign workers. Other types of jobs expected to suffer in the years ahead include those most easily performed by computers or machines, such as credit authorizers or mail clerks.

In the Tenth District, the outlook for jobs held by racial and ethnic groups in 2000 varies somewhat by group. Projected annual growth through 2014 of jobs held by whites in the region in 2000 is identical to the average across all races and ethnic groups—1.17 percent (Chart 5).¹¹ Whites are highly concentrated in many professional jobs expected to grow quickly. However, whites also have high concentrations in many production and farming occupations, which are expected to shed jobs in the years ahead.

Jobs held by Hispanics in the District in 2000 are projected to grow slower than the average across races by 2014. At 1.08 percent, the projected annual growth rate for these jobs is low due in part to their high concentrations in occupations such as cashiers, construction laborers, and telemarketers (Appendix 2).¹² Low concentrations in fast-growing—and often relatively high-paying—occupations such

as registered nurses, computer software engineers, lawyers, and accountants also play a role. The prospects for jobs held by Hispanics are helped by large concentrations in several healthcare aide and services occupations, which are expected to grow rapidly, although the average salaries for these occupations are generally low.

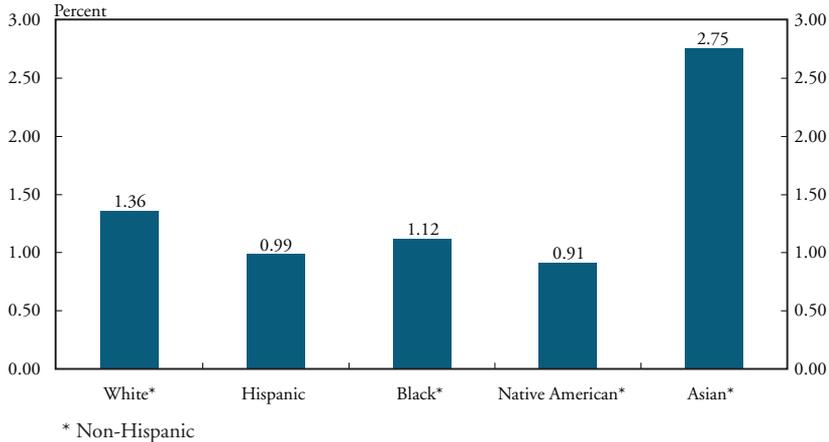
Jobs held by blacks in the region in 2000 are expected to grow at the same pace through 2014 as the average for all races and ethnic groups, as well as for whites—at 1.17 percent. This rate is expected despite the fact that blacks have a much different occupational structure than whites and all races combined. As with Hispanics, the intermediate-term projection for jobs held by blacks in the region is helped by high concentrations of black workers in a number of healthcare aide and services occupations, which are expected to grow rapidly. Unfortunately, these occupations generally do not pay the highest wages. Also like Hispanics, relatively few blacks hold jobs in high-paying occupations such as physicians and computer software engineers, which are expected to grow solidly.

Jobs held by Native Americans in the region are projected to grow 1.12 percent annually through 2014, which is slightly less than the average across all races and ethnic groups. The outlook for Native Americans is hurt by high concentrations in occupations such as sewing machine operators and precious stone workers, jobs which are expected to experience sluggish growth or even losses. In addition, Native Americans have low concentrations in some high-paying occupations that are projected to grow rapidly, such as doctors and lawyers. As with other minorities, the job growth projections for Native Americans are helped by high concentrations in relatively low-paying occupations, such as healthcare aides and janitors, which are expected to grow rapidly.

In contrast to jobs held by larger minority groups, jobs held by Asians in the District are expected to grow faster than the average across all races and ethnic groups over the next five to ten years—at 1.31 percent. Asian workers in the region have high concentrations in a number of high-paying professional occupations—such as physicians, medical scientists, and computer software engineers—which are expected to grow rapidly. Asians also have low concentrations in farming-related occupations, which are generally expected to experience declining employment.

Chart 6

NET EFFECT ON AVERAGE SALARY OF PROJECTED CHANGES IN THE MIX OF JOBS, 2004-2014



Source: Bureau of Labor Statistics; Census Bureau; authors' calculations

Across individual District states, the projections for the growth of jobs held by minorities in 2000 generally vary more widely (Appendix 3). For example, annual projected growth for jobs currently held by Hispanics in Nebraska and Oklahoma is less than 1 percent, while jobs currently held by blacks in Colorado are expected to grow nearly 1.25 percent annually. The projected growth of jobs held by Asians in Missouri is nearly 1.4 percent.

In addition to possible differences in the projected growth rate of jobs currently filled by minority groups in the region, the projected *quality* of job growth—in terms of pay—could also differ across groups. For example, the projected growth rate for jobs held by a minority group in the region may be the same as the projected job growth rate for whites. Such is the case for blacks. But differences in occupational structure by pay often result in differing outlooks for the future quality of job growth for one group compared with another. Blacks have higher concentrations in lower-paying occupations, so the quality of the growth in jobs held by whites would likely exceed that of blacks.

Based on national salary averages for occupations in 2004 and on the District's occupational mix in 2000, job and salary projections for 2014 are positive for all races and ethnic groups (Chart 6). For all

groups, jobs that are currently high-paying are expected to grow faster than jobs that are currently low-paying. However, growth of high-paying jobs held by Hispanics, blacks, and Native Americans would not outpace the growth of low-paying jobs as much as it would for whites and, especially, for Asians. As a result, pay gaps between whites and the largest minority groups in the region would increase.

In short, the outlook for jobs held by Hispanics, blacks, and Native Americans is slightly below the average for all races, especially when pay of jobs is taken into account. But the outlook for jobs held by Asians is much better than the average.

The future supply of minority workers

The projected growth of jobs filled by minorities in the region sheds some light on the expected short-term demand for minorities currently employed in the region, as well as on how minority pay gaps might increase due simply to changes in occupational mix. But even more important, especially for implications on earnings, is information regarding the future supply of minority workers in the region. Minority workers entering the labor force could potentially be competing for jobs with other minorities, which could have a negative impact on minority wages.

Current estimates suggest labor force growth among all minority groups will continue to exceed that of whites by a wide margin in the years ahead. As a result, the minority share of population in the nation is projected to keep rising. Specifically, national labor force growth from 2004 to 2014 is expected to be 34 percent for Hispanics, 17 percent for blacks, and 32 percent for Asians, and 30 percent for other races (including Native Americans) and races in combination. By contrast, labor supply growth for whites is projected to be only 3 percent. Should these projections hold true, minorities would make up 34.4 percent of the U.S. labor force in 2014, up from 30 percent in 2004.

According to BLS, the primary factor driving minorities' greater share of the U.S. labor force in the years ahead is immigration (Toossi). In addition, BLS projections are based on expectations that

the higher birthrates of most minorities relative to whites will persist, as will the generally higher rates of labor force participation of Hispanics and Asians.

At the state level, projections of minority labor force growth are generally not available or not directly comparable across states. In addition, national projections are largely dependent on expected rates of immigration, which can change dramatically. However, given the considerably faster expected labor force growth of minority groups in the nation relative to whites in the years ahead, minority population growth is likely to continue to outpace white population growth in the Tenth District as well.

Faster growth in the minority labor supply relative to the white labor supply could potentially pose difficulties for some minority groups in the District. If minorities entering the labor force have similar skills as current minority workers, competition for their jobs could increase and thus push down wages for these jobs, especially given that projected growth of jobs held by minorities in the region is the same as, or slightly slower than, that of whites. For example, a recent study found evidence that the immigration of low-skilled workers from 1960 to 2000 partly explained why the wages and employment status of lower-skilled blacks suffered during this period (Borjas, Grogger, and Hanson).

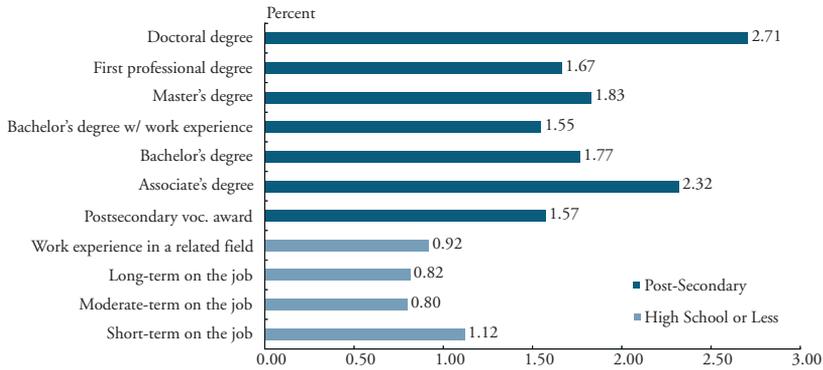
Moreover, any increases in pay gaps between whites and minorities that might result from increased job competition among minorities would only accentuate the possible increases in wage gaps resulting from changing occupational structure. While higher-paying jobs in the region are expected to grow faster than lower-paying jobs in the years ahead, this is less true for jobs held by Hispanics, blacks, and Native Americans than for whites. So, a surge in minority workers with similar skills as current minority workers would likely further add to economic disparities for minorities relative to whites—unless minorities as a whole are better prepared for the fast-growing, high-paying jobs of the future.

IV. IMPLICATIONS FOR MINORITY WORKERS

Growth in the supply of minority workers in the region is likely to exceed that of whites in the years ahead and may also surpass demand for the types of jobs currently held by minorities. To avoid slow wage

Chart 7

ANNUAL PROJECTED U.S. JOB GROWTH, 2004-2014, BY PRIMARY EDUCATION OR TRAINING REQUIREMENTS OF JOBS



Source: U.S. Bureau of Labor Statistics

growth and reduce the earnings gap with whites, most minority groups will need to increase their education levels to seek new occupations in the years ahead. This section reviews the skills and education levels employers are expected to demand heading forward and suggests ways minorities can improve their job prospects.

Projected job growth by education and skill requirements

As part of its occupational employment projections, BLS includes employers' preferred level of education and training for each detailed occupation. BLS divides education and training requirements into 11 groups, ranging from doctoral degree to short-term, on-the-job training. Jobs requiring post-secondary education are projected to grow much faster through 2014 than those requiring a high school degree or less (Chart 7). The seven classifications of jobs requiring some post-secondary education are projected to grow from 1.55 to 2.71 percent through 2014. By contrast, the four groups of occupations not requiring post-secondary education are expected to grow from 0.80 to 1.12 percent annually.

Projected job growth through 2014 does not necessarily increase in lockstep with higher levels of educational attainment. Rather, the biggest distinction appears to be between jobs requiring any type of post-secondary education and those requiring no post-secondary education at all. Jobs requiring doctoral degrees, the highest level of educational attainment, are indeed expected to grow fastest in the years ahead. Occupations in this group that are expected to grow particularly rapidly include post-secondary teachers, psychologists, and medical scientists. The second-fastest job growth is projected for jobs requiring associate degrees. Occupations in this group that are expected to grow particularly rapidly include medical records technicians, physical therapy assistants, and dental hygienists.

Occupations requiring bachelor's degrees, both with and without work experience, are also expected to grow faster than the average across all occupations. However, these jobs, as a whole, are expected to grow slower than jobs requiring doctorate and associate degrees, due in part to expected declines or slow growth in demand for several occupations requiring bachelor's degrees, such as purchasing managers, news reporters, and most engineering occupations.

Among jobs not requiring post-secondary education, the fastest job growth is projected for jobs requiring only short-term, on-the-job training—the lowest level of education and skill requirements categorized by BLS. Jobs in this category that are expected to grow especially rapidly are home health aides and other healthcare-related aides, as well as security guards and receptionists. Jobs requiring moderate- to long-term, on-the-job training are expected to grow slower than those requiring less training. One reason for this phenomenon is the expected continued reduction of many production- and farming-related jobs—those that often require considerable skill development to be fully qualified. As a result, an increased supply of workers formerly employed in higher-skilled occupations not requiring post-secondary education may find themselves competing with lower-skilled workers for jobs.

How can minorities improve their future job prospects?

Minorities in the Tenth District generally have less education than whites. The fastest job growth in the years ahead is expected among higher-paying occupations requiring some type of post-secondary education. It would appear, then, that educating minorities will be crucial to their future job prospects.

Most studies have found that different educational levels among racial and ethnic groups can be traced to disparities in family resources (Hauser; Kane). Earnings among minority groups in the Tenth District are—to differing degrees, depending on race or ethnicity—lower than for whites. As a result, the children of minorities in the region likely have fewer family financial resources for post-secondary education than white children. A traditional policy solution for these disparities in college education opportunities has been short-term aid programs for low- and moderate-income families during their children's college years.

Recent studies suggest, however, that differences in family resources during the college years explain only part of the differences in educational attainment. In fact, the influence of family resources on forming the abilities and college readiness of children well before high school graduation have the biggest effect on their ultimate educational attainment levels (Altonji and Dunn; Cameron and Heckman; Neal and Johnson). As a result, these studies propose making sure minorities have more family resources and educational opportunities early in life to ensure that they graduate from high school and pursue post-secondary education.

In the short term, the skills and educational attainment levels of minorities in the region are unlikely to change considerably. For all minority groups, the share of 20-34 year-olds in the region that have completed or are pursuing post-secondary education is similar to that of persons 35 and older. As a result, older workers dropping out of the workforce may not have much effect on educational attainment differences across races (Appendix 4). In addition, recent national information on the share of 18-year-olds enrolled in college also suggests minorities will continue to lag in educational attainment. Specifically, the *National Longitudinal Survey of Youth* recently showed

that while 42 percent of 18-year-old whites were enrolled in college from 1998 to 2003, only 28 percent of black 18-year-olds and 24 percent of Hispanic 18-year-olds were enrolled in college.

In the short run, one near term opportunity for minority workers could be to pursue associate degrees or vocational awards. As shown earlier, the growth in jobs requiring associate degrees is second only to jobs requiring doctorate degrees. Jobs requiring vocational awards are also expected to grow much faster than average. Minority groups and whites have similar shares of their population with some college or an associate degree, but the gap in projected job growth in coming years between jobs requiring any kind of post-secondary education and those requiring no post-secondary education is sizable. Thus, to the extent possible, minorities graduating from high school would be well served to seek at least one additional level of education.

V. SUMMARY

Minorities' presence in Tenth District labor markets has risen markedly in recent decades and is likely to expand further in coming years. This article has found that the largest minority groups in the region—Hispanics, blacks, and Native Americans—are less concentrated in high-paying occupations than are whites. In addition, the intermediate-term outlook for jobs currently held by Hispanics, blacks, and Native Americans in the region is not as bright as the outlook for jobs held by whites.

Previous research suggests that differences in educational and skill attainment are the overarching reason that most minority groups' job prospects lag. The article finds that average educational attainment among Hispanics, blacks, and Native Americans in the region is indeed well below average and appears unlikely to change considerably in the near term. To alleviate this discrepancy over the longer term, the article suggests that greater attention be focused on improving minorities' family resources and educational opportunities early in life. Over the shorter term, placing increased emphasis on the sizable impact that acquiring any level of post-secondary education can have on near-term job prospects may be the best solution.

Appendix 1

OCCUPATIONAL EMPLOYMENT BY RACE OR ETHNICITY, 2000

(percent of total employment)

U.S.	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	13.1	14.7	7.1	8.5	8.9	13.8
Professional	19.6	21.2	10.3	15.4	14.8	30.2
Nat. res. /const./maint.	10.4	13.2	16.1	7.0	14.9	4.0
Sales/admin.	26.8	27.3	23.3	27.7	24.0	24.2
Prod./trans.	14.9	10.3	21.4	18.9	16.4	13.6
Service	15.2	13.4	21.8	22.5	21.0	14.2
Colorado	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	15.3	17.1	7.3	11.4	10.0	11.6
Professional	21.3	23.4	10.0	15.7	15.2	30.9
Nat. res. /const./maint.	11.2	12.5	19.3	7.0	14.4	3.8
Sales/admin.	27.3	27.8	23.7	33.5	26.8	22.2
Prod./trans.	10.6	10.1	17.4	14.2	13.4	16.0
Service	14.3	9.0	22.3	18.1	20.2	15.6
Kansas	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	13.5	14.6	5.5	7.8	9.5	7.8
Professional	19.6	20.4	9.3	15.1	30.4	15.1
Nat. res. /const./maint.	11.0	13.9	17.0	7.4	13.7	4.2
Sales/admin.	25.9	26.5	18.2	27.6	26.0	16.0
Prod./trans.	15.2	10.9	29.0	19.9	18.9	23.6
Service	14.9	13.8	21.0	22.2	18.6	16.4
Missouri	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	13.1	13.1	7.7	8.5	8.6	11.6
Professional	18.1	18.4	18.4	12.3	14.5	14.6
Nat. res. /const./maint.	10.5	14.3	12.0	5.4	14.3	3.1
Sales/admin.	26.9	27.0	21.3	28.7	23.1	17.0
Prod./trans.	16.5	11.1	25.1	18.5	20.1	12.2
Service	15.5	16.1	21.6	24.3	19.4	17.2
Nebraska	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	14.5	15.3	4.8	8.9	7.0	8.1
Professional	17.8	18.4	7.3	13.2	11.7	30.0
Nat. res. /const./maint.	11.0	14.3	13.9	5.2	10.3	2.8
Sales/admin.	26.4	27.0	15.7	30.1	23.2	15.9
Prod./trans.	15.3	11.2	41.1	19.7	17.2	27.8
Service	14.9	13.7	17.3	22.7	30.7	15.4
New Mexico	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	11.7	14.9	8.7	8.5	6.1	12.1
Professional	21.1	27.6	13.1	20.0	15.8	36.4
Nat. res. /const./maint.	12.8	12.6	16.2	8.0	17.1	2.6
Sales/admin.	25.8	26.1	25.8	28.5	23.3	20.4
Prod./trans.	11.1	10.1	13.6	11.0	14.8	10.5
Service	17.6	8.7	22.8	24.1	22.8	17.9

Appendix 1, continued

Oklahoma	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	11.8	13.0	5.8	7.4	8.5	8.5
Professional	17.7	18.7	8.5	14.0	14.7	28.5
Nat. res. /const./maint.	12.3	14.3	21.5	7.0	14.3	4.7
Sales/admin.	26.6	27.4	17.2	28.2	23.8	19.9
Prod./trans.	15.5	12.1	24.5	17.5	19.6	17.9
Service	16.0	14.4	22.4	25.8	19.1	20.5
Wyoming	All races	White*	Hispanic	Black*	Nat. Am.*	Asian*
Management	11.7	12.0	6.9	10.2	8.5	17.2
Professional	17.4	17.9	9.9	11.6	15.6	25.0
Nat. res. /const./maint.	16.6	16.5	21.4	7.9	21.9	3.9
Sales/admin.	24.0	24.4	20.1	28.1	19.0	16.0
Prod./trans.	13.0	16.4	16.5	19.6	9.5	5.3
Service	17.3	12.8	25.2	22.6	25.4	32.5

* Non-Hispanic

Source: U.S. Census Bureau

*Appendix 2***OCCUPATIONAL CONCENTRATIONS HELPING
MINORITIES' EMPLOYMENT PROJECTIONS**

Occupation	Helping Due to High or Low Concentration	Average U.S. Salary
<i>Hispanic</i>		
Farmers and ranchers	Low	\$42,050
Paralegals and legal assts.	High	\$42,740
Personal and home care aides	High	\$17,560
Misc. community and social svc. specialists	High	\$32,031
Janitors and building cleaners	High	\$20,800
Misc. life, physical, and social sciences	High	N/A
Computer programmers	Low	\$66,480
Computer support specialists	High	\$43,660
Grounds maintenance workers	High	\$22,623
Network sys. and data communications	High	\$64,080
<i>Black*</i>		
Nursing, psychiatric, home health aides	High	\$21,131
Farmers and ranchers	Low	\$42,050
Personal and home care aides	High	\$17,560
Janitors and building cleaners	High	\$20,800
Paralegals and legal assts.	High	\$42,740
Social workers	High	\$39,112
Computer support specialists	High	\$43,660
Computer systems analysts	High	\$69,470
Licensed practical and vocational nurses	High	\$35,580
Preschool and kindergarten teachers	High	\$31,084
<i>Native American*</i>		
Nursing, psychiatric, home health aides	High	\$21,131
Personal and home care aides	High	\$17,560
Misc. agricultural workers	Low	N/A
Janitors and building cleaners	High	\$20,800
Misc. life, physical, and social sciences	High	N/A
Counselors	High	\$40,114
Farmers and ranchers	Low	\$42,050
Network sys and data communications	High	\$64,080
Residential Advisors	High	N/A
Paralegals and legal assts.	High	\$42,740
<i>Asian*</i>		
Post-secondary teachers	High	\$59,949
Computer software engineers	High	\$80,634
Physicians and surgeons	High	\$148,968
Medical scientists	High	\$67,716
Farmers and ranchers	Low	\$42,050
Misc. personal appearance workers	High	\$21,468
Misc. agricultural workers	Low	N/A
Janitors and building cleaners	High	\$20,800
Accountants and auditors	High	\$57,160
Physical therapist assistants and aides	High	\$31,870

* Non-Hispanic

Source: U.S. Bureau of Labor Statistics, authors' calculations

*Appendix 2, continued***OCCUPATIONAL CONCENTRATIONS HURTING
MINORITIES' EMPLOYMENT PROJECTIONS**

Occupation	Helping Due to High or Low Concentration	Average U.S. Salary
<i>Hispanic</i>		
Registered nurses	Low	\$55,680
Cashiers	High	\$17,200
Computer software engineers	Low	\$80,634
Construction laborers	High	\$28,920
Misc. legal support workers	High	\$41,610
Medical assts. and other health care support	Low	N/A
Post-secondary teachers	Low	\$59,949
Lawyers	Low	\$110,590
Accountants and auditors	Low	\$57,160
Telemarketers	High	\$23,520
<i>Black*</i>		
Medical assts. and other health care support	Low	N/A
Computer software engineers	Low	\$80,634
Dental assistants	Low	\$29,570
Telemarketers	High	\$23,520
Cashiers	High	\$17,200
Registered nurses	Low	\$55,680
Post-secondary teachers	Low	\$59,949
Network sys. and data communications	Low	\$64,080
Physicians and surgeons	Low	\$148,968
Chemical technicians	High	\$40,040
<i>Native American*</i>		
Medical assts. and other health care support	Low	N/A
Computer software engineers	Low	\$80,634
Cashiers	High	\$17,200
Post-secondary teachers	Low	\$59,949
Physicians and surgeons	Low	\$148,968
Medical scientists	Low	\$67,716
Sewing machine operators	High	\$19,430
Misc. legal support workers	High	\$41,610
Jewelers, precious stone, and metal workers	High	\$30,800
Lawyers	Low	\$110,590
<i>Asian*</i>		
Registered nurses	Low	\$55,680
Sewing machine operators	High	\$19,430
Elementary and middle school teachers	Low	\$46,598
Social workers	Low	\$39,112
Electrical and electronic assemblers	High	\$26,958
Medical assts. and other health care support	Low	N/A
Network and computer syst. administrators	Low	\$62,300
Firefighters	Low	\$39,980
Network sys. and data communications	Low	\$64,080
Computer support specialists	Low	\$43,660

* Non-Hispanic

Source: U.S. Bureau of Labor Statistics, authors' calculations

Appendix 3
**ANNUAL PROJECTED GROWTH IN JOBS, 2004-2014,
 BASED ON RACE OR ETHNICITY OF JOB OCCUPANT
 IN 2000**

	White*	Hispanic	Black*	Nat. Am.*	Asian*
United States	1.21	1.04	1.17	1.15	1.31
Colorado	1.29	1.09	1.24	1.19	1.32
Kansas	1.15	1.03	1.16	1.12	1.26
Missouri	1.13	1.05	1.16	1.11	1.38
Nebraska	1.10	0.97	1.07	1.18	1.23
New Mexico	1.27	1.13	1.34	1.15	1.34
Oklahoma	1.14	0.99	1.18	1.09	1.28
Wyoming	1.12	1.06	1.06	1.21	1.41

* Non-Hispanic

Source: Bureau of Labor Statistics; Census Bureau; authors' calculations

Appendix 4
SHARE OF POPULATION WITH SOME COLLEGE OR HIGHER, 2000
(Percent)

	Ages 20-34					Ages 35 and up						
	Total	White*	Hispanic	Black*	Nat. Am.*	Asian*	Total	White*	Hispanic	Black*	Nat. Am.*	Asian*
United States	59.9	65.8	52.3	35.2	47.1	78.4	60.0	63.0	51.9	37.3	52.2	69.2
Tenth District	61.9	66.9	33.4	49.5	66.0	75.4	61.5	63.9	39.5	50.8	79.8	62.2
Colorado	66.2	74.5	34.4	60.2	57.2	77.6	70.5	74.6	40.6	68.3	60.0	64.3
Kansas	65.1	69.6	30.4	54.9	60.2	69.1	63.0	64.8	33.8	56.6	58.5	56.7
Missouri	59.6	61.2	39.0	51.0	45.8	78.8	56.0	56.4	45.3	52.8	54.4	66.1
Nebraska	68.1	72.4	26.4	54.1	41.7	71.4	61.1	62.3	30.5	54.5	50.0	57.2
New Mexico	55.3	70.9	65.2	43.3	43.2	76.6	61.6	74.5	64.5	41.8	47.5	69.3
Oklahoma	56.5	60.3	27.5	53.7	47.9	74.0	57.4	59.0	34.5	54.9	50.9	56.7
Wyoming	61.7	64.1	40.2	56.9	41.2	76.8	62.5	63.8	37.8	69.2	56.5	64.3

Source: U.S. Census Bureau

ENDNOTES

¹The Tenth Federal Reserve District includes the entire states of Colorado, Kansas, Nebraska, Oklahoma, and Wyoming, plus the northern half of New Mexico and western third of Missouri.

²For simplicity, for the remainder of this article, non-Hispanic whites will be referred to simply as whites. When other racial groups are mentioned in the article, including blacks, Native Americans, and Asians, it can generally be assumed that it is the non-Hispanic portion of these groups being referred to, unless otherwise noted. Native Americans refer to the racial group American Indian-Alaska Native (AIAN).

³For example, the birthrate (live births per 1,000 population) among whites in the United States in 1990 was 14.4, compared with 23.0 for blacks and 26.7 for Hispanics. Birthrates of blacks and Hispanics exceeded that of whites in all district states in 1990.

⁴Median earnings data by race and ethnicity were taken from the *2005 American Community Survey*. Data were unavailable for races or ethnic groups with very small presences in some states, including: Hispanics in Wyoming; blacks in New Mexico and Wyoming; Native Americans in Kansas, Missouri, Nebraska, and Wyoming; and Asians in Nebraska, New Mexico, and Wyoming. Thus, the overall District average excludes these groups.

⁵This article focuses only on the pay gaps of employed persons in the Tenth District. If the zero earnings of unemployed workers were also taken into account, pay gaps would be even larger. At the time of the 2000 Census, unemployment among each of the four largest minority groups in the region exceeded that of whites (4.0 percent), especially among Native Americans (11.4 percent), blacks (11.3 percent), and Hispanics (8 percent).

⁶State-level data on occupational employment by race and ethnic group are available from the 2000 Census. Data are available for over 400 detailed occupations and show considerable differences in occupational mix between minority groups and whites. For ease of presentation in this section, the ten major occupational groups as defined by the Census Bureau are grouped into six relatively similar sized groups, which are shown in Table 1 in descending order of average pay.

⁷For actual figures in individual Tenth District states, see Appendix 1.

⁸Analysis of national data that are directly comparable to one another show similar results. In 2004, the average salary for all full-time workers in the United States was \$43,375. Blacks, as a whole, earned 25 percent less. If all blacks had received the average salary for their occupation, their average salary would have been 16 percent below average. Similarly, Hispanics in the country earned 31 percent less than average. If all Hispanics had received the average salary for their occupation, their average salary would have been 21 percent below average. Asians, on the other hand, earned an average salary 17 percent higher than the national average in 2004. If all Asians received the average salary for their occupation, their pay would have been 11 percent above average.

⁹For national and individual state educational attainment figures, see Appendix 4.

¹⁰Every two years, economists at the U.S. Bureau of Labor Statistics project job growth by industry and occupation for the entire country over a ten-year period. The projections are based on a careful analysis of important economic and demographic indicators, assume a labor market that clears, and assume an economy operating at its full potential (Saunders). Historically, BLS occupational employment projections have been found to be largely accurate (Veneri; Rosenthal). For example, Rosenthal found that BLS has correctly predicted the direction of change for the vast majority of occupations.

¹¹Because detailed occupational employment data for minorities are not available at the state level for 2004—the initial year of projections—occupational employment data from the 2000 Census are used for analysis. To illustrate the lack of sizable difference in using 2000 or 2004 data, even despite the 2001 recession, a comparison of national data for these years may be useful. Overall, at the national level, jobs are projected to grow at a 1.21 percent annual rate based on the 2004 distribution of occupational employment. Based on 2000 distribution, jobs are projected to grow at a 1.19 percent annual rate (Chart 5). For Hispanics, annual job growth based on the 2004 distribution of jobs at the national level is projected to be 1.09 percent. Based on the 2000 distribution of jobs, annual job growth is projected to be 1.04 percent. For blacks, annual projected job growth based on the 2004 distribution of jobs is 1.22 percent. Annual projected growth based on the 2000 distribution of jobs is 1.17 percent. And for Asians, the other group for which national data are available for both years, annual projected job growth based on the 2004 distribution of jobs is 1.34 percent, compared with 1.31 percent based on the distribution of jobs in 2000.

¹²Occupations contributing the most to differences between groups are generally ones in which a group's concentration of jobs differs considerably from that of the nation and in which projected job growth is markedly above or below average at the national level.

REFERENCES

- Albelda, Randy P. 1986. "Occupational Segregation by Race and Gender, 1958-1981," *Industrial and Labor Relations Review*, vol. 39, no. 3, pp. 404-11.
- Altonji, Joseph G., and Thomas A. Dunn. 1996. "The Effects of Family Characteristics on the Return to Education," *Review of Economics and Statistics*, vol. 78, no. 4, pp. 692-704.
- Anderson, Deborah, and David Shapiro. 1996. "Racial Differences in Access to High-Paying Jobs and the Wage Gap Between Black and White Women," *Industrial and Labor Relations Review*, vol. 49, no. 2, pp. 273-86.
- Borjas, George J. 1995. "Assimilation and Changes in Cohort Quality Revisited: What Happened to Immigrant Earnings in the 1980s?" *Journal of Labor Economics*, vol.13, no. 2, pp. 201-45.
- Borjas, George J. 1999. *Heaven's Door*. Princeton, N.J.: Princeton University Press.
- Borjas, George J., Jeffrey Grogger, and Gordon H. Hanson. 2006. "Immigration and African- American Employment Opportunities: The Response of Wages, Employment, and Incarceration to Labor Supply Shocks," National Bureau of Economic Research, Working Paper No. 12518, September.
- Bound, John, and Richard B. Freeman. 1002. "What went wrong? The Erosion of Relative Earnings and Employment among Young Black Men in the 1980s," *Quarterly Journal of Economics*, February, pp. 201-232.
- Cameron, Stephen V., and James J. Heckman. 2001. "The Dynamics of Educational Attainment for Black, Hispanic, and White Males," *Journal of Political Economy*, vol. 109, no. 3, pp. 455-99.
- Chiswick, Barry R., and Paul W. Miller. 1995. "The Endogeneity Between Language and Earnings: International Analyses," *Journal of Labor Economics*, vol. 13, no. 2, pp. 246-88.
- Darity, Jr., William A., and Patrick L. Mason. 1998. "Evidence on Discrimination in Employment: Codes of Color, Codes of Gender," *The Journal of Economic Perspectives*, vol. 12, no. 2, pp. 63-90.
- Fix, Michael, and Raymond Struyk. 1994. *Clear and Convincing Evidence*. Washington, D.C.: Urban Institute Press.
- Gabriel, Paul E. 2004. "Differences in Earnings, Skills and Labour Market Experience Among Young Black and White Men," *Applied Economics Letters*, vol. 11, pp. 337-41.
- Hauser, Robert M. 1993. "Trends in College Entry Among Blacks, Whites, and Hispanics," *Prejudice, Politics, and the American Dilemma*. Stanford, Calif.: Stanford University Press.
- Hecker, Daniel E. 2005. "Occupational Employment Projections to 2014," *Monthly Labor Review*, November, pp. 70-81.
- Holzer, Harry J. 1998. "Employer Skill Demands and Labor Market Outcomes of Blacks and Women," *Industrial and Labor Relations Review*, vol. 52, no. 1, pp. 82-98.
- Hurst, Michael. 1997. "The Determinants of Earnings Differentials for Indigenous Americans: Human Capital, Location, or Discrimination?" *The Quarterly Review of Economics and Finance*, vol. 37, no. 4, pp. 787-807.

- Kane, Thomas J. 2001. "College Entry by Blacks Since 1970: The Role of College Costs Family Background, and the Returns to Education," *Journal of Political Economy*, vol. 102, pp. 878-911.
- Keeton, William R., and Geoffrey B. Newton. 2006. *Migration in the Tenth District: Long-Term Trends and Current Developments*, Federal Reserve Bank of Kansas City, Third Quarter.
- King, Mary C. 1992. "Occupational Segregation by Race and Sex, 1940-88," *Monthly Labor Review*, April, pp. 30-37.
- Levy, Frank, and Richard J. Murnane. 2006. *How Computerized Work and Globalization Shape Human Skill Demands*, First International Conference on Globalization and Learning.
- Neal, Derek A., and William R. Johnson. 1996. "The Role of Premarket Factors in Black-White Wage Differences," *Journal of Political Economy*, vol. 104, no. 5, pp. 869-95.
- O'Neill, June E., and Dave M. O'Neill. 2005. "What Do Wage Differentials Tell Us About Labor Market Discrimination?" NBER Working Paper No. 11240, March.
- Rosenthal, Neal H. 1999. "The Quality of BLS Projections: A Historical Account," *Monthly Labor Review*, May, pp. 27-35.
- Saunders, Norman C. 2005. "A Summary of BLS Projections to 2014," *Monthly Labor Review*, November.
- Toossi, Mitra. 2005. "Labor Force Projections to 2014: Retiring Boomers," *Monthly Labor Review*, November, pp. 25-44.
- Trejo, Stephen J. 1997. "Why Do Mexican Americans Earn Low Wages?" *The Journal of Political Economy*, vol. 105, no. 6, pp. 1235-68.
- Veneri, Carolyn M. 1997. "Evaluating the 1995 Occupational Employment Projections," *Monthly Labor Review*, September, pp.15-31.